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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,057	06/02/2001	Kambiz Hayat-Dawoodi	TI-29619	4012

7590 12/31/2003

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EXAMINER	
KOBERT, RUSSELL MARC	
ART UNIT	PAPER NUMBER
2829	

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/873,057	HAYAT-DAWOODI, KAMBIZ	
	Examin r	Art Unit	
	Russell M Kobert	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *6 and 10-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

1. Applicant's arguments filed October 14, 2003 have been fully considered but they are not persuasive.

Applicant's argument that the rejection of claims 1-5 and 7-9 is improper because the dimensions of the product such as width of the slits is dependent on a number of factors including the size of the chip mount pad, the magnitude of the current and magnetic field being measured, the heat dissipated by the chip and so forth is not considered to further materially describe the apparatus as claimed. As such the meets and bounds of the invention are limited to the apparatus that which is claimed. Applicant appears to be asserting that the physical structure of the claimed invention is limited by its application or use and that the invention is made or produced based on experimental results (product by process). Applicant is reminded that it is a well-known axiom in assessing patentability that a claimed apparatus is characterized by its structure and not its intended use. That is, "apparatus claims must be structurally distinguishable from the prior art." MPEP 2114. In *In re Danly*, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In *Hewlett-Packard Co v Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: "Apparatus claims cover what a device is, not what it does." (emphasis in original). That is, in an apparatus claim, if a prior art structure discloses all of the structural elements in the claim, as well as their relative juxtaposition, then it reads on the claim, regardless of whether or not the function for which the prior art structure was intended is the same as that of the claimed invention. Moreover, Applicant is further

reminded that the patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

With respect to Applicant's argument that Brown fails to teach a configuration for improving electrical and heat transfer characteristics, that argument is respectfully traversed. As stated in the Office Action mailed on July 10, 2003, the improvement, noted at column 4, lines 14-18, clearly states that the leadframes may be constructed of a metal chosen for its electrical conductivity and heat dissipation. Moreover, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

2. Claims 1-5 and 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant claims a slit or plurality of slits wide enough to interrupt electron flow but not wide enough to significantly reduce thermal conduction in a leadframe structure. It is not apparent what width the slits would be required to fall between to meet the criteria noted supra. This feature is not considered to further limit the structure of claims 1 and 8.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Manabe (4797726).

Manabe anticipates a metallic leadframe structure (Figures 3 or 6) for use with a semiconductor chip (see Abstract) intended for operation in a changing magnetic field, comprising: a chip mount pad (combination of 6, 7, 8 and 9 in Figure 3; col 2, ln 48-50) having at least one slit (referred to as gaps; see col 2, ln 40-44) penetrating the whole thickness of said pad and substantially traversing the area of said pad from one edge to the opposite edge (clearly shown in Figure 3 as area between 10 and 12 for one slit and 11 and 13 for a second slit not including planes 10, 11, 12 and 13); and said slit wide enough to interrupt electron flow in the pad plane, but not wide enough to significantly reduce thermal conduction in a direction normal to said pad plane, whereby said slit is operable to disrupt eddy currents induced in said pad by said changing magnetic field; as recited in claim 1.

As to claim 5, having a pad with an area larger than the chip intended for mounting is anticipated by Manabe (col 3, ln 1-11).

Manabe anticipates a metallic leadframe structure (Figure 6) for use with a semiconductor chip (see Abstract) intended for operation in a changing magnetic field, comprising: a chip mount pad (14-21) having a plurality of slits (the area bounded by plates 22 through 29; see also col 3, ln 48-66) in a configuration operable to suppress eddy currents induced in said pad by said changing magnetic field; each of said slits wide enough to interrupt electron flow in the pad plane, but not wide enough to significantly reduce thermal conduction in a direction normal to said pad plane; as recited in claim 8.

As to claim 9, having the plurality slits configured approximately parallel or approximately star-burst-like (as shown in figure 6), or in any pattern suitable for suppressing the origin of eddy currents, while preserving the mechanical stability and thermal conduction of said leadframe is anticipated by Manabe.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manabe (4797726).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a slit having a width from about 0.01 to 0.5 mm as

described in claim 2 or a structure comprising a sheet-like starting configuration having a thickness in the range from about 100 to 300 μm as described in claim 3 because these claims demonstrate limiting conditions which can be determined by routine experimentation and are considered to be within the scope of the invention as disclosed in Manabe et al.

> Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et al., 33 C.C.P.A. (Patents) 1250, 156 F. 2d 239, 70 USPQ 412 ; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F. 2d 986, 38 USPQ 213 ; Allen et al. v. Coe, 77 App. D. C. 324, 135 F. 2d 11, 57 USPQ 136 .

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Manabe (4797726) as applied to claims 1 and 3 above, and further in view of Brown (4918511).

Brown shows a leadframe wherein said sheet-like starting configuration is selected from a group of metals consisting of copper, copper alloy, brass, aluminum, iron-nickel alloy, and invar (col 1, ln 25-27) as mentioned in claim 4.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied the teaching of Brown to that of Manabe to make the claimed invention because Manabe teaches (col 1, ln 13-17) that leadframes are made of metal and Brown teaches (col 4, ln 14-18) that a leadframe may be constructed of a metal chosen for its electrical conductivity and heat dissipation. Moreover, Brown goes on to state that having portions of the lead frame removed (col 2, ln 6-11) provide improved electrical and heat transfer characteristics to the leadframe as is the same useful technique described in Manabe.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (703) 308-5222. *Starting January 12, 2004, the new telephone number will be (571) 272-1963.*

The Examiner's Supervisor, Kammie Cuneo, can be reached at (703) 308-1233. *Starting January 12, 2004, the new telephone number will be (571) 272-1957.*

For an automated menu of Tech Center 2800 phone numbers call (571) 272-2800.

Russell M. Kobert
Patent Examiner
Group Art Unit 2829
December 17, 2003